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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,165	02/13/2004	Hitoshi Mizutani	118666	5106

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10/20/2005

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P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

LE, KHANH H

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/777,165

Applicant(s)

MIZUTANI ET AL.

Examiner

Khanh H. Le

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US Patent No. 6,853,418) in view of Ishikawa et al. (US Patent No. 5,600,455).

3. With respect to claim 1, Suzuki teaches a spread illuminating apparatus for illuminating two objects, the apparatus comprising:

at least one light source (Fig. 4, item 18);

a light conductive plate (19) having the at least one light source at an end surface thereof and defining first (30) and second (29) major surfaces from which light emitted from the at least one light source (18) and introduced in the light conductive plate (19) exits out respectively toward two objects to be illuminated;

an optical sheet unit (9) disposed on at least the second major surface so as to cover an entire area thereof; and a reflecting means (33) having a smaller surface area than the second major surface, and disposed directly on top of the optical sheet unit (9).

Suzuki does not teach an optical sheet unit (9) consisting of a diffuser sheet and a condenser sheet.

Ishikawa teaches an optical sheet unit for a planar lighting device having a diffuser sheet (Fig. 10, item 7) and a condenser sheet (12 and 14) for preventing any stripe pattern, improving the brightness, and providing a uniform light distribution across the display screen (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Suzuki's diffuser sheet and a condenser sheet as taught by Ishikawa to preventing any stripe pattern, improving the brightness, and providing a uniform light distribution across the display screen.

4. With respect to claim 2, Suzuki discloses the reflecting means (33) of a spread illuminating apparatus is located so as to cover an area of the second major surface (30) other than an area designated as a light exiting surface.

5. With respect to claim 4, Ishikawa teaches the condenser sheet is composed of two optical films (Fig. 10, items 12 and 14) which each have a prism pattern (convex pattern) with a serrated section configuration formed on a surface thereof opposite top a surface facing the light conductive plate, and which have their respective prism patterns oriented orthogonal to each other (sheet 12 and sheet 14 have convex patterns which are orthogonal to each other as shown in Fig. 10).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US Patent No. 6,853,418) and Ishikawa et al. (US Patent No. 5,600,455) as applied to claim 1 above, and further in view Oda et al. (US Publication No. 2003/0063234).

7. With respect to claim 3, the combination of Suzuki and Ishikawa teaches the diffuser sheet but does not teach about the haze factor of the diffuser sheet in the range of 85 to 95 percent.

Oda teaches the diffuser sheet used in LCD displays (Fig. 1, item 16) having the haze factor from 30 to 90 percent increases the viewing angle and improves the uneven luminance distribution across the surface of the spread illuminating apparatus (Paragraph 0055).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Suzuki and Ishikawa by including a diffuser sheet as taught by Oda to increase the viewing angle and improve the uneven luminance distribution of the surface lighting device (the haze factor portion of Oda, 85 to 90 percent, is within the range of haze factor 85 to 95 percent of the present invention).

8. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US Patent No. 6,853,418) and Ishikawa et al. (US Patent No. 5,600,455) as applied to claims 1 and 4 above, and further in view Yokota et al. (US Patent No. 5,764,315).

9. With respect to claims 5 and 8, the combination of Suzuki and Ishikawa teaches the condenser sheets of the optical unit but silent about the thickness of the condenser sheets.

Yokota teaches the thickness of the condenser sheet used in LCD displays is 50 μ m or greater, preferably 90 to 300 μ m (the light adjusting sheet, Fig. 6, item 37, and Col. 6, lines 48-49).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Suzuki and Ishikawa by including a condenser sheet with the thickness between 50 μ m and 300 μ m as taught by Yokota to make the optical unit thinner and to uniformly illuminate the display surface (Col.1, lines 34-35).

10. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US Patent No. 6,853,418) and Ishikawa et al. (US Patent No. 5,600,455) as applied to claims 1 and 2 above, and further in view Kashima et al. (US Patent No. 5,521,797).

11. With respect to claims 6 and 9, the combination of Suzuki and Ishikawa teaches the reflecting means but silent about the reflectance of reflecting means gradually varying at given area close to the area designated as a light exiting surface

Kashima teaches about the reflectance of reflecting means used in LCD displays gradually varying at a given area close to the area designated as a light exiting surface (Fig. 2-3, Col. 2, lines 1-10).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Suzuki and Ishikawa by using the reflecting means of Kashima to provide a uniform luminance distribution throughout the light emitting surface of the backlighting device (Col. 2, lines 4-5).

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US Patent No. 6,853,418) in view of Ishikawa et al. (US Patent No. 5,600,455) as applied to claim 1 above, and further in view of Yoshida (US Patent No. 6,897,914).

With respect to claim 7, the combination of Suzuki and Ishikawa fails to disclose a deflecting means is disposed directly on top of the optical sheet unit on the second major surface so as to cover at least an area which is not cover by the reflecting means. However, Yoshida discloses a deflecting means on the top of the optical sheet of the second major surface so as to cover at least an area which is not covered by the reflecting means (Yoshida covers two sides of the light conductive plate as claimed in claim 7 and the deflecting means of Yoshida meets the limitation of to cover **at least** an area which is not covered by the reflecting means because Yoshida reflecting means covers the whole area of the light conductive means (Fig. 1)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Suzuki and Ishikawa by adding another deflecting means as taught by Yoshida to illuminate the two major surfaces by only one light source to reduce the production cost.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim (US Patent No. 6,466,292), Honda et al. (US Patent No. 6,139,161), and Chuang (US patent No. 6,871, 975) are inventions with dual sided LCD display; Shinohara et al. (US Patent No. 5,581,062), Takeuchi et al. (US Patent No. 5,944,405), and Millikan et al. (US Patent No. 5,883, 684) are inventions with orthogonal pattern prism sheets; Hatazawa et al. (US Patent No. 6,239,851) thickness of prism film, Yokoyama (US Patent No. 5,134, 549) pattern used in conventional surface light source.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh H. Le whose telephone number is (571) 272-8325. The examiner can normally be reached on Monday - Friday, 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on (571) 272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RENEE LUEBKE
PRIMARY EXAMINER